

FIGS. 15A and 15B depict an example implementation in which a secondary display device is also included as part of the display device.

FIGS. 16A and 16B depict an example implementation in which an additional configuration supported by folding of the housing in relation to each other is shown.

DETAILED DESCRIPTION

Overview

The size of a display device has been found to be a major consideration by consumers regarding a choice of which mobile computing device to buy, whether to purchase multiple mobile computing devices, and so on. For example, a user may be forced to balance portability of a mobile computing device having a relatively small display device (e.g., a mobile phone) with increased viewability afforded by larger display devices included on relatively large mobile computing devices, e.g., tablets.

A mobile computing device having a flexible hinge structure is described. In one or more implementations, a mobile computing device includes a plurality of housings, e.g., two housings, three housings, and so on. The housings are secured to each other using a flexible hinge structure that is configured to support a continuous surface, across which, a display device may be attached that is flexible. For example, the display device may be configured as an OLED and secured to outer surfaces of the housings as well as the flexible hinge structure, itself.

In this way, the housings of the mobile computing device may support a variety of different usage scenarios through arrangement of the housings in relation to each other, e.g., by folding. For example, a “tablet” configuration may be supported in which each of the housings are “laid flat” such that an entirety of the display device is viewable by a user. In a “phone” configuration, one of the housings may be stacked behind another one of the housings such that the mobile computing device may be easily grasped using a single hand yet still provide a portion of the display device that is viewable by a user. In a “closed” configuration, the display device may be positioned internally in the stacked configuration and thus may be used to protect the display device when not in use. A variety of other configurations are also described, such as a “mini-tablet” configuration, as well as biasing mechanisms that may be employed to bias the mobile computing device to remain in a desired configuration, further discussion of which may be found in relation to the following sections.

In the following discussion, an example environment is first described that may employ the techniques described herein. Example procedures are then described which may be performed in the example environment as well as other environments. Consequently, performance of the example procedures is not limited to the example environment and the example environment is not limited to performance of the example procedures.

Example Environment

FIG. 1 is an illustration of an environment 100 in an example implementation that is operable to employ support the flexible hinge structure techniques described herein. The illustrated environment 100 includes a mobile computing device 102 having one or more hardware components 104, examples of which include a processing system 106 and a computer-readable storage medium that is illustrated as a

memory 108, and a display device 110 although other components are also contemplated as further described below.

The mobile computing device 102 may be configured in a variety of ways. For example, the mobile computing device may be configured a mobile phone, tablet, portable gaming device, music player, and so forth. Thus, the mobile computing device 102 may range from full resource devices with substantial memory and processor resources (e.g., tablet computers, phones, and laptops) to a low-resource device with limited memory and/or processing resources (e.g., music players). Although a mobile computing device is described, other configurations are also contemplated, such as desktop configurations, televisions, and so forth.

The mobile computing device 102 is further illustrated as including an operating system 112, although other embodiments are also contemplated in which an operating system is not employed. The operating system 112 is configured to abstract underlying functionality of the mobile computing device 102 to applications 114 that are executable on the mobile computing device 102. For example, the operating system 112 may abstract the processing system 106, memory 108, network, and/or display device 110 functionality of the mobile computing device 102 such that the applications 114 may be written without knowing “how” this underlying functionality is implemented. The applications 114, for instance, may provide data to the operating system 112 to be rendered and displayed by the display device 110 without understanding how this rendering will be performed. The operating system 112 may also represent a variety of other functionality, such as to manage a file system and user interface that is navigable by a user of the mobile computing device 102.

The mobile computing device 102 may support a variety of different interactions. For example, the computing device 102 may include one or more hardware devices that are manipulable by a user to interact with the device, such as a keyboard, cursor control device (e.g., mouse), and so on. The mobile computing device 102 may also support gestures, which may be detected in a variety of ways. The mobile computing device 102, for instance, may support touch gestures that are detected using touchscreen functionality of the display device 110 of the computing device 102 using one or more sensors 116. The sensors 116, for instance, may be configured as capacitive, resistive, acoustic, light (e.g., sensor in a pixel), and so on that are configured to detect proximity of an object.

The mobile computing device 102 is illustrated as including a plurality of housings, examples of which include first and second housings 118, 120. The first and second housings 118, 120 are secured to each other using a flexible hinge structure 122. The first and second housings 118, 120 along with the flexible hinge structure 122 form a continuous surface in this example that is disposed generally along a single plane. The display device 110 is secured to the continuous surface such that a viewing area of the display device 110 extends across the outer surfaces of the first and second housings 118, 120 as well as an outer surface of the flexible hinge 122.

The flexible hinge structure 122 is configured to support rotational movement along an axis that is perpendicular, generally, to a longitudinal axis of the hinge. This may be utilized to position the first and second housings 118, 120 to support a variety of different configurations. Additionally, the mobile computing device 102 may include a biasing mechanism 124 that may be used to bias the first and second housings to remain in a desired configuration.